

## STATEMENT OF BASIS

as required by LAC 33:IX.3109 for LPDES facilities, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0056031; AI 148; PER20090001** to discharge to waters of the State of Louisiana as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

- I. THE APPLICANT IS:** Vermilion Parish Police Jury  
Vermilion Parish Solid Waste Plant  
100 N. State Street, Suite 200  
Abbeville, LA 70510
- II. PREPARED BY:** Angela Marse
- DATE PREPARED:** February 11, 2010
- III. PERMIT ACTION:** reissue LPDES permit LA0056031, AI 148; PER20090001

LPDES application received: April 9, 2009

LPDES permit issued: October 1, 2004  
LPDES permit expired: September 30, 2009

**IV. FACILITY INFORMATION:**

- A. The application is for the discharge of treated contact stormwater, treated leachate, treated sanitary wastewater, truck and equipment washwater, and non-contact stormwater from a municipal solid waste landfill serving Vermilion Parish.
- B. The facility is located at 8500 Birch Road in Abbeville, Vermillion Parish.
- C. The treatment facility for leachate, contact stormwater, and washwater consists of an oxidation pond. Treatment for sanitary wastewater consists of two mechanical package plants. Disinfection at Outfall 102 is by chlorination.

**D. Outfall 101**

Discharge Location: Latitude 30° 1' 53" North  
Longitude 92° 8' 26" West

Description: treated leachate, contact stormwater, and washwater

Expected flow: 0.02 MGD

Type of Flow Measurement which the facility is currently using: flow meter

**Outfall 102**

Discharge Location: Latitude 30° 1' 47" North  
Longitude 92° 8' 26" West

Description: treated sanitary wastewater

Statement of Basis  
LA0056031; AI 148; PER20090001  
Page 2

Expected flow: 0.0015 MGD

Type of Flow Measurement which the facility is currently using:  
estimate based on design capacity

Outfall 001

Discharge Location: Latitude 30° 1' 47" North  
Longitude 92° 8' 26" West

Description: treated leachate, washwater, and contact stormwater from outfall 101, treated sanitary wastewater from outfall 102, and non-contact stormwater from disposal cells with final/interim cover.

Expected flow: 0.02 MGD

Type of Flow Measurement which the facility is currently using: engineering calculation

Outfall 002

Discharge Location: Latitude 30° 1' 59" North  
Longitude 92° 7' 57" West

Description: non-contact stormwater from cells with interim/final cover

Expected flow: 0.02 MGD

Type of Flow Measurement which the facility is currently using: engineering calculation

Outfall 301

Discharge Location: Latitude 30° 1' 41" North  
Longitude 92° 8' 9" West

Description: treated sanitary wastewater

Expected flow: 0.0005 MGD

Type of Flow Measurement which the facility is currently using:  
estimate based on design capacity

Outfall 003

Discharge Location: Latitude 30° 1' 43" North  
Longitude 92° 7' 44" West

Description: non-contact stormwater from cells with interim/final cover and treated sanitary wastewater from outfall 301

Expected flow: 0.02 MGD

Type of Flow Measurement which the facility is currently using: engineering calculation

## V. RECEIVING WATERS:

The discharge is into an unnamed ditch, thence into Coulee Kenny, thence into the Vermilion River in segment 060802 of the Vermilion - Teche River Basin. This segment is listed on the 303(d) list of impaired waterbodies.

The **critical low flow** (7Q10) of Coulee Kenny 0.1 cfs.

The **hardness value** is 78.6 mg/l and the **fifteenth percentile value for TSS** is 21.9 mg/l.

The designated uses and degree of support for Segment 060802 of the Vermilion - Teche River Basin are as indicated in the table below<sup>1/</sup>:

Degree of Support of Each Use						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Not Supported	Fully Supported	Not Supported	N/A	N/A	N/A	Fully Supported

<sup>1/</sup>The designated uses and degree of support for Segment 060802 of the Vermilion - Teche River Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

Section 303 (d) of the Clean Water Act as amended by the Water Quality Act of 1987, and EPA's regulations at 40 CFR 130 require that each state identify those waters within its boundaries not meeting water quality standards. The Clean Water Act further requires states to implement plans to address impairments. LDEQ is developing Total Maximum Daily Loadings Studies (TMDLs) to address impaired waterbodies. Segment 060802 of the Vermilion-Teche River Basin is on the 2006 Integrated 303(d) List of Impaired Waterbodies. The suspected causes of impairment are carbofuran, fecal coliform, nitrate/nitrite, and organic enrichment/low DO. Sources of the impairment are attributed to irrigated and non-irrigated crop production and municipal point sources.

The facility will have an intermittent discharge. Therefore, it is not likely that this discharge will have any significant impact on the receiving stream that will cause further impairment. Suspected causes for impairment which were not delisted and are not directly attributed to similar point sources have been eliminated in the formulation of effluent limitations and other requirements of this permit. This is the case for carbofuran. No effluent limits for carbofuran are in the proposed permit. TMDLs have been developed to address impairments and are discussed below.

### Pathogen Indicators

The wasteload allocation resulting from the Vermilion River TMDL for Fecal Coliform (2000) did not require any changes in the permitting requirements outside those already established by water quality standards for primary contact. To protect against potential receiving water impairments due to pathogens, fecal coliform limits remain in the permit. Monitoring for fecal coliform is the best indicator for the potential presence of pathogenic organisms in wastewater.

### Organic enrichment/Low Dissolved Oxygen

Monitoring for BOD and dissolved oxygen is the best indicator by which to prevent against the potential discharge of dissolved oxygen at levels below that of state water quality standards. Biochemical oxygen demand (or BOD) is the amount of oxygen required by bacteria to oxidize biologically degradable

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 4

material (normally organic matter) found in wastewater, effluents and polluted waters. The test measures the amount of oxygen consumed by naturally occurring bacteria over a five-day period. The Vermilion River TMDLs for Dissolved Oxygen and Nitrogen (2000) recommended that permits for individual point sources in the watershed with flows greater than 25,000GPD should be issued seasonal effluent limitations. Specifically, 10 mg/l CBOD, 5 mg/l ammonia, and 5 mg/l dissolved oxygen for the months of May through December. For the months of January through April effluent limits are 20 mg/l CBOD, 10 mg/l ammonia, and 5 mg/l dissolved oxygen. (CBOD is carbonaceous biochemical oxygen demand. This test inhibits the biological activity associated with nitrogen and prevents the overestimated of oxygen demand.) The discharge from the facility is not continuous and usually occurs when the receiving waterbody is not at critical, or zero flow, conditions. Landfill point sources were not considered in the TMDL study. Vermilion Parish Solid Waste Plant was required to monitor and report dissolved oxygen during the previous permit cycle. DMRs indicated dissolved oxygen values higher than 5 mg/l required by the TMDL. Monitoring of dissolved oxygen will not be required by the proposed permit. BOD will still be limited based on the previous permit limits.

Nitrite/nitrate

Ammonia, nitrite, and nitrate are all considered nutrients. Ammonia is a common product of the decomposition of organic matter found in human waste and other wastewaters. In the presence of dissolved oxygen, ammonia is converted to nitrate by nitrifying bacteria. Nitrite is an intermediate product between ammonia and nitrate, thus the relationship between ammonia and nitrate/nitrite. Monitoring for ammonia indirectly monitors for nitrite/nitrate. Evidence indicates that ammonia can exert a considerable toxic effect on aquatic life. Effluent limits for ammonia are required in the permit under EPA's Effluent Guidelines for the Landfill Point Source Category. These are similar to the TMDL for May through December and more stringent than the TMDL for January through April.

**VI. ENDANGERED SPECIES:**

The receiving waterbody, Subsegment 060802 (Vermilion River from La. Hwy. 3073 to the Intracoastal Canal Waterway), is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated January 5, 2010 from Rieck (FWS) to Nolan (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

**VII. HISTORIC SITES:**

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

**VIII. PUBLIC NOTICE:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

Statement of Basis  
LA0056031; AI 148; PER20090001  
 Page 5

For additional information, contact:

Mrs. Angela Marse  
 Water Permits Division  
 Department of Environmental Quality  
 Office of Environmental Services  
 P. O. Box 4313  
 Baton Rouge, Louisiana 70821-4313

**IX. PROPOSED PERMIT LIMITS:**

**Final Effluent Limits:**

**OUTFALL 101**

Except for TSS, effluent limits for outfall 001 and 002 are the same as the previous permit. EPA has promulgated guidelines for discharges of landfill wastewater. These guidelines are applicable to all landfills that discharge directly to receiving waters. For non-hazardous landfills, the wastewater treatment technologies that EPA used as the basis for the effluent limitations included equalization, activated sludge, biological treatment, and multimedia filtration.

Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

<b>Effluent Characteristic</b>	<b>Monthly Avg.</b>	<b>Daily Avg.</b>	<b>Basis</b>
BOD <sub>5</sub>	20 mg/l	30 mg/l	BPJ based on similar discharges for similar facilities and previous permit limits.
TSS	27 mg/l	88 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).
Ammonia	4.9 mg/l	10 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).
Chlorides	---	250 mg/l	LAC 33:IX.1113.C.2 and BPJ from previously issued water discharges permits for similar facilities/effluents.
Sulfates	---	250 mg/l	LAC 33:IX.1113.C.2 and BPJ from previously issued water discharges permits for similar facilities/effluents.
Alpha Terpineol	0.016 mg/l	0.033 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).
Benzoic Acid	0.071 mg/l	0.12 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 6

Effluent Characteristic	Monthly Avg.	Daily Avg.	Basis
P-cresol	0.014 mg/l	0.025 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).
Phenol	0.015 mg/l	0.026 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).
Zinc	0.11 mg/l	0.2 mg/l	EPA Effluent Guidelines, Pretreatment Standards, and New Source Performance Standards for the Landfills Point Source Category (40 CFR Part 445).

**Other Effluent Limitations:****1) Fecal Coliform**

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5., the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Daily Maximum) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgement in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

**2) pH**

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time. (Limits as established through BPJ considering BCT for similar waste streams in accordance with LAC 33:IX.5905.C.)

**3) Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

**4)**

The treatment facility will be treating leachate and contact stormwater. Studies have shown the leachate generated at municipal solid waste landfills can be highly concentrated and variable, and may include the presence of priority pollutants. Contributing to this variability may be the presence of household hazardous waste in the municipal solid waste stream (EPA, 1987). Pollutants which may be found in leachate include volatile organic compounds, metals, and pesticides.

This Office has established a list of priority pollutants with threshold limits intended as action levels. Should a substance exceed the level of the established concentration, the Department is to be notified, in writing, within five (5) days of exceedance and Vermilion Parish Solid Waste Plant shall institute a study to determine the source of the substance. Within sixty (60) days of the written notification the permittee shall submit a written account of the nature of the study, the study results, and measures being taken to secure abatement.

1. Draft Threshold Limits – The draft threshold limits are derived from either technology-based effluent limits or State Water Quality Standards and requirements. The most stringent of these limits is contained in the permit. Technology-based effluent

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 7

limitations are based on the applicable effluent limitations guidelines, on Best Professional Judgment (BPJ) in the absence of applicable guidelines, or on a combination of these two methods. Currently, there are guidelines for the treatment of leachate from a municipal solid waste landfill and they have been included in the permit in addition to these threshold values. This office intends to employ technology-based effluent limitations taken from previously issued BPJ based water discharge permits for municipal solid waste landfills and other land disposal facilities. Each of the guideline regulations were accompanied by a development document, which provided the support for the final guideline. A water quality screen was performed using stream characteristics for Coulee Kenny. This screen was used to establish water quality based limits. (See Appendix A-1.)

2. Derivation of Threshold Limits

**LDEQ/EPA Technology-Based Limits** – In the early 1980's the LDEQ and EPA developed effluent limitations for all of the priority pollutants contained in the EPA 2C application for land disposal facilities. Although the limitations were technology-based and derived prior to formal State water quality criteria, water quality considerations played a significant role in the development of the limits.

The threshold limits established for metals and pesticides are water quality based in accordance with the state water quality criteria (Appendix A-1). Metals for which state criteria have not been promulgated; threshold limits have been established using technology-based effluent limits taken from water discharge permits previously issued to municipal solid waste landfills and other land disposal facilities. In accordance with the water quality standards, there may be no discharge of PCBs.

Chemical	DEQ/EPA Daily Max. ug/l	WQBL Daily Max. ug/l	Threshold Value ug/l	ML Required ug/l
<b>METALS, CYANIDE, AND TOTAL PHENOLS</b>				
Total Antimony	600		600	60
Total Arsenic	100	941	100	10
Total Beryllium	100		100	5
Total Cadmium	100	22	22	1
Chromium III	100	3067	100	10
Chromium VI	100	20	20	10
Total Copper	500	64	64	10
Total Cyanide	100	37	37	20
Total Lead	150	83	83	5
Total Mercury	10	0.24	0.24	0.2
Total Nickel (freshwater)	500	2546	500	40
Total Selenium	100		100	5
Total Silver	100		100	2
Total Thallium	100		100	10
Total Phenols	50	503	50	5
<b>VOLATILE COMPOUNDS</b>				
Acrolein	100		100	50
Acrylonitrile	100		100	50
Benzene	100	991	100	10
Bromodichloromethane	100	261	100	10
Bromoform	100	2751	100	10
Carbon Tetrachloride	100	95	95	10

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 8

Chlorobenzene	100		100	50
Chloroethane	100		100	10
2-Chloroethyl vinyl ether	100		100	50
Chloroform	100	3805	100	10
Dibromochloromethane	100	402	100	10
1,1-Dichloroethane	100		100	10
1,2-Dichloroethane	100	539	100	10
1,1-Dichloroethylene (1,1-Dichloroethene)	100	46	46	10
1,2-Dichloropropane	100		100	10
1,3-Dichloropropene (1,3-Dichloropropylene)	100	798	100	10
Ethylbenzene	100	4213	100	10
Methyl Bromide (Bromomethane)	100		100	50
Methyl Chloride (Chloromethane)	100	72423	100	50
Methylene Chloride	100	6898	100	20
1,1,2,2,-Tetra-chloroethane	100	142	100	10
Tetrachloroethylene	100	198	100	10
1,2- <i>trans</i> -Dichloroethylene	100		100	10
Toluene	100	1672	100	
1,2- <i>trans</i> -Dichloroethylene (1,2-dichloroethene)	100		100	10
1,1,1-Trichloroethane	100	6952	100	10
1,1,2-Trichloroethane	100	547	100	10
Trichloroethylene (Trichloroethene)	100	1665	100	10
Vinyl Chloride	100	2838	100	10
<b>ACID COMPOUNDS</b>				
2-Chlorophenol ( <i>o</i> -Chlorophenol)	100	340	100	10
2,4-Dichlorophenol	100	266	100	10
2,4-Dimethylphenol	100		100	10
2,4-Dinitrophenol	100		100	50
4,6-Dinitro- <i>o</i> -Cresol {4,6-Dinitro- <i>o</i> -phenol} {4,6-Dinitro-2-mehtyl phenol}	100		100	50
2-Nitrophenol	100		100	20
4-Nitrophenol	100		100	50
P-Chloro-M-Cresol	100		100	
Pentachlorophenol	100		100	50
Phenol	100		100	10
2,4,6-Trichlorophenol	100		100	10
<b>PESTICIDES</b>				
Aldrin	10	0.032	0.032	0.05
Chlordane	10	0.015	0.015	0.2
DDD	10	0.021	0.021	0.1
DDE	10	0.015	0.015	0.1
DDT	10	0.007	0.007	0.1
Dieldrin	10	0.004	0.004	0.1



## Statement of Basis

LA0056031; AI 148; PER20090001

Page 9

Endosulfan	10	0.29	0.29	0.1
Endosulfan	10	0.29	0.29	
Total Endosulfan		0.58	0.58	0.1
Endosulfan sulfate	10		10	0.1
Endrin	5	0.114	0.114	0.1
Endrin aldehyde	10		10	0.1
Heptachlor	10	0.005	0.005	0.05
Heptachlor Epoxide	10		10	0.05
Hexachlorocyclohexane – (BHC-)	10		10	0.05
Hexachlorocyclohexane – (BHC-)	10		10	0.05
Hexachlorocyclohexane – (BHC-)	10		10	0.05
Hexachlorocyclohexane – (Lindane)	10	1.46	1.46	0.05
Total PCB's	No discharge			1.0
Toxaphene	10	0.000057	0.000057	5.0
<b>BASE/NEUTRAL COMPOUNDS</b>				
Acenaphthene	100		100	10
Acenaphthylene	100		100	10
Anthracene	100		100	10
Benzidene	100	0.013	0.013	50
Benzo(a)anthracene	100		100	10
3,4-Benzofluoranthene {Benzo(b)fluoranthene}	100		100	10
Benzo(k)fluoranthene	100		100	10
Benzo(a)pyrene	100		100	10
Benzo(ghi)perylene	100		100	10
Benzyl butyl Phthalate {Butyl benzyl Phthalate}	100		100	10
Bis(2-chloroethyl)ether	100		100	10
Bis(2-chloroethoxy) methane	100		100	10
Bis(2-ethylhexyl) Phthalate	100		100	10
Bis(2-chloroisopropyl) ether	100		100	10
4-Bromophenyl phenyl ether	100		100	10
2-Chloronaphthalene	100		100	10
4-Chlorophenyl phenyl ether	100		100	10
Chrysene	100		100	10
Dibenzo (a,h) anthracene	100		100	20
Di-n-Butyl Phthalate	100		100	10
1,2-Dichlorobenzene	100		100	10
1,3-Dichlorobenzene	100		100	10
1,4-Dichlorobenzene {p-Dichlorobenzidine}	100		100	10
3,3-Dichlorobenzidine	100		100	50
Diethyl Phthalate	100		100	10
Dimethyl Phthalate	100		100	10
2,6-Dinitrotoluene	100		100	10
2,4-Dinitrotoluene	100		100	10
Di-n-octyl Phthalate	100		100	10
1,2-Diphenylhydrazine	100		100	20
Fluoranthene	100		100	10

## Statement of Basis

LA0056031, AI 148, PER20090001

Page 10

Fluorene	100		100	10
Hexachlorobenzene	100	0.019	0.0024	10
Hexachlorobutadiene	100	6.7	1.07	10
Hexachlorocyclopentadiene	100		100	10
Hexachloroethane	100		100	20
Ideno (1,2,3- <i>cd</i> )pyrene	100		100	20
Isophorone	100		100	10
Naphthalene	100		100	10
Nitrobenzene	100		100	10
N-nitrosodimethylamine	100		100	50
N-nitrosodiphenylamine	100		100	20
N-nitrosodi- <i>n</i> -propylamine	100		100	20
Phenanthrene	100		100	10
Pyrene	100		100	10
1,2,4-Trichlorobenzene	100		100	10

- Chronic Value taken from the Water Quality Criteria Summary  
Total Chromium has been removed from State Water Quality Standards and replaced with criteria for Chromium III and Chromium VI, reference to Total Chromium has been removed from the PPS tables.

A number of the threshold limitations established from the criteria are below EPA established minimum quantification levels (MQL). The MQL is accepted as the lowest concentration at which a substance can be quantitatively measured. Where the permit limits are below the MQL the following is noted in the permit:

If any individual analytical test result is less than the minimum quantification level (MQL) listed above, a value of zero(0) may be used as the test result for those parameters for the Discharge Monitoring Report (DMR) calculations and reporting requirements.

**OUTFALLS 102 and 301**

The facility utilizes two extended aeration mechanical plants for the treatment of sanitary wastewater. Both are below 5000 GPD design capacity/expected flow. Effluent limits are based on the Class I Sanitary General Permit for flows under 5,000 GPD.

Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg.	Daily Max.	Basis
BOD <sub>5</sub>	---	45 mg/l	Class I Sanitary General Permit issued November 8, 2007.
TSS	---	45 mg/l	Class I Sanitary General Permit issued November 8, 2007.
Fecal coliform	---	400 col/100ml	Class I Sanitary General Permit issued November 8, 2007.

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 11

**Other Effluent Limitations:****1) pH**

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time. (Limits as established through BPJ considering BCT for similar waste streams in accordance with LAC 33:IX.5905.C.)

**2) Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

**OUTFALL 001****Non-contact Stormwater**

Besides treated landfill wastewater (leachate and contact stormwater) from internal outfall 101, outfall 001 includes stormwater runoff from closed and undeveloped areas of the landfill and treated sanitary wastewater from outfall 102. Outfalls 101 and 102 are monitored for pollutants of concern at the point of discharge prior to mixing with the non-contact stormwater from outfall 001. The Multi-Sector General Permit authorizes discharges of stormwater within the state of Louisiana from industrial facilities within the sectors described in the general permit. Sector L is for landfills and land application sites. Although this permit does not qualify for the Multi-Sector General Permit, stormwater limits are based on the general permit, Sector L.

Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

<b>Effluent Characteristic</b>	<b>Monthly Avg.</b>	<b>Daily Max.</b>	<b>Basis</b>
Oil and Grease	---	15 mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
TOC	---	50 mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
TSS	---	Report mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
Iron	---	Report mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.

## Statement of Basis

LA0056031, AI 148, PER20090001

Page 12

**Other Effluent Limitations:****1) pH**

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time. (Limits as established through BPJ considering BCT for similar waste streams in accordance with LAC 33:IX.5905.C.)

**2) Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

**3) Toxicity Characteristics**

Based on information contained in the permit application, LDEQ has determined there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream in violation of Section 101(a)(3) of the Clean Water Act. The State has established a narrative criteria which, in part, states that "No substances shall be present in the waters of the State or the sediments underlying said waters in quantities alone or in combination will be toxic to human, plant, or animal life..." (LAC 33:IX.1113.B.5) The previous permit required quarterly sampling for *Ceriodaphnia dubia* and *Pimephales promelas*. Data on file shows the permittee complied with the permit requirements and no toxicity failures were reported during the past five years.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of the effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. LAC33:IX.1121.B.3. provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

The permittee shall submit the results of any biomonitoring testing performed in accordance with the LPDES Permit No. LA0056031, Part II, Section E for the organisms indicated below.

**TOXICITY TESTS****FREQUENCY**

Chronic static renewal 7-day survival & reproduction test using *Ceriodaphnia dubia* (Method 1002.0) 1/quarter

Chronic static renewal 7-day survival & growth test using fathead minnow (*Pimephales promelas*) (Method 1000.0) 1/quarter

This frequency is based on recommendation by LDEQ Biomonitoring personnel (see attached recommendation), the receiving stream, and the facility's previous biomonitoring test results. In accordance with the Environmental Protection Agency (Region 6) WET testing frequency acceleration(s), the biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas*. If there are no lethal or sub-lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Ceriodaphnia dubia*). Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is reissued.

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 13

**Dilution Series** – The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in toxicity tests. These additional concentrations shall be 10%, 13%, 18%, 24%, and 32%. The critical biomonitoring dilution is defined as 24% effluent. The critical biomonitoring dilution is calculated in Appendix A-1 of this statement of basis. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in **Part II Section E** under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in **Part II Section E** of the permit.

The permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or waterbody. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.2903. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

**OUTFALL 002, 003****Non-contact Stormwater**

Outfall 002 and 003 are for the discharge of non-contact stormwater from disposal areas with interim/final cover or undeveloped areas. For this reason, effluent limits will be the same as outfall 001.

Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

<b>Effluent Characteristic</b>	<b>Monthly Avg.</b>	<b>Daily Max.</b>	<b>Basis</b>
Oil and Grease	---	15 mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
TOC	---	50 mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
TSS	---	Report mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.
Total Recoverable Iron	---	Report mg/l	Multi-Sector General Permit Sector L issued May 1, 2006.

**Other Effluent Limitations:****1) pH**

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time. (Limits as established through BPJ considering BCT for similar waste streams in accordance with LAC 33:IX.5905.C.)

**2) Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

☐ The permit contains stormwater pollution prevention language.

Statement of Basis  
LA0056031; AI 148; PER20090001  
 Page 15

# **XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:**

## **A) Inspections**

A review of the files indicates the following most recent inspection was performed for this facility.

Date: December 9, 2008

Inspector: Rhonda McCormick

Findings and/or Violations:

1. Permittee needs to apply for a permit modification for new package plant for sanitary wastewater from office.
2. Biomonitoring does not appear to have been conducted as required at outfall 001.
3. Permittee is not recording pH on all DMRs at outfalls 002 and 003.

## **B) Compliance and/or Administrative Orders**

A review of the files indicates no recent enforcement actions administered against this facility.

## **C) DMR Review**

A review of the discharge monitoring reports for the period beginning August, 2007 through September, 2009 has revealed the following violations:

Parameter	Outfall	Period of Excursion	Permit Limit	Reported Quantity
TSS	102	June, 2008	45 mg/l	52 mg/l
TSS	101	January, 2009	90 mg/l	157 mg/l
TSS	101	January, 2009	135 mg/l	157 mg/l
BOD	101	March, 2009	20 mg/l	21 mg/l
Chloride	101	March, 2009	250 mg/l	319
Fecal coliform	101	March, 2009	200 col/100ml	>6000 col/100ml
Fecal coliform	101	March, 2009	400 col/100ml	>6000 col/100ml
TOC	001	September, 2009	50 mg/l	52.2 mg/l
BOD	101	September, 2009	20 mg/l	28 mg/l
Fecal coliform	101	September, 2009	200 col/100ml	>6000 col/100ml
Fecal coliform	101	September, 2009	400 col/100ml	>6000 col/100ml
BOD	101	October, 2009	20 mg/l	27 mg/l
Chloride	101	October, 2009	250 mg/l	284 mg/l
Fecal coliform	101	October, 2009	200 col/100ml	300 col/100ml
Ammonia	101	October, 2009	4.9 mg/l	9.5 mg/l

The permittee has experienced multiple violations at outfall 101 since January, 2009. Also, during the review period, the permittee did not complete the DMR for the priority pollutant scan as required by the permit. For these reasons, the permittee has been referred to the Office of Environmental Compliance, Enforcement Division.

## Statement of Basis

LA0056031; AI 148; PER20090001

Page 16

**XII. ADDITIONAL INFORMATION:**

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as requested by the permittee and/or as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

This permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(C) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act or more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDLs, if the effluent standard, limitations, water quality studies or TMDLs so issued or approved:

- a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- b) Controls any pollutant not limited in the permit; or
- c) Requires reassessment due to change in 303(d) status of waterbody; or
- d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** as shown in the permit are standard for facilities of this type.

**XIII. TENTATIVE DETERMINATION:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

**XIV. REFERENCES:**

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2009.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2009.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2009.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.



Statement of Basis

LA0056031; AI 148; PER20090001

Page 17

LPDES Permit Application to Discharge Wastewater, Vermilion Parish Police Jury, Vermilion Parish  
Solid Waste Landfill, April 9, 2009.

## APPENDIX A-2, LA0056031, AI No. 148

Documentation and Explanation of Water Quality Screen  
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

## Receiving Water Characteristics:

Receiving Water: unnamed ditch, thence into Coulee Kenny, thence into the Vermilion River

Critical Flow, Qrc (cfs): 0.1

Harmonic Mean Flow, Qrh (cfs): 1

Segment No.: 060802

Receiving Stream Hardness (mg/L): 78.6

Receiving Stream TSS (mg/L): 21.9

MZ Stream Factor, Fs: 1

Plume distance, Pf: N/A

## Effluent Characteristics:

Company: Vermilion Parish Police Jury

Facility flow, Qe (MGD): 0.02

Effluent Hardness: N/A

Effluent TSS: N/A

Pipe/canal width, Pw: N/A

Permit Number: LA0056031

## Variable Definition:

Qrc, critical flow of receiving stream, cfs

Qrh, harmonic mean flow of the receiving stream, cfs

Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D

Pw = Pipe width or canal width in feet

Qe, total facility flow, MGD

Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)

Cu, ambient concentration, ug/L

Cr, numerical criteria from LAC.IX.1113, Table 1

WLA, wasteload allocation

LTA, long term average calculations

WQBL, effluent water quality based limit

ZID, Zone of Initial Dilution in % effluent

MZ, Mixing Zone in % effluent

## Formulas used in aquatic life water quality screen (dilution type WLA):

## Streams:

$$\text{Dilution Factor} = \frac{Q_e}{(Q_{rc} \times 0.6463 \times F_s + Q_e)}$$

$$\text{WLA a,c,h} = \frac{C_r}{\text{Dilution Factor}} - \frac{(F_s \times Q_{rc} \times 0.6463 \times C_u)}{Q_e}$$

Static water bodies (in the absence of a site specific dilution).

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8) P_w \pi^{1/2}}{P_f}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(P_w^{1/2})}{(P_f)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf}{(2.8) Pw \pi^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf^{1/2}}{2.38 Pw^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrc \times 0.6463 \times Cu)}{Qe}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrh \times 0.6463 \times Cu)}{Qe}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.8) Pw \pi^{1/2}}{Pf}$$

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf^*}{(2.8) Pw \pi^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf^{1/2*}}{2.38 Pw^{1/2}}$$

\* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:

$$LTAA = WLAa \times 0.32$$

$$LTAc = WLAc \times 0.53$$

$$LTAh = WLAh$$

WQBL Calculations:

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:

$$\text{Daily Maximum} = \text{Min}(LTAA, LTAc) \times 3.11$$

$$\text{Monthly Average} = \text{Min}(LTAc, LTAh) \times 1.31$$

## Appendix A-2

LA0056031, AI No. 148

Page 3

If human health LTA is more limiting:

Daily Maximum = LTAh X 2.38

Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day). (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

concentration(ug/L):  $\frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$

The following is an explanation of the references in the spreadsheet.

- (\*1) Parameter being screened.
- (\*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (\*3) Monthly average effluent or technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.
- (\*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (\*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (\*18) - (\*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (\*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280(\ln(\text{hardness})) - 1.6774)}$
Chromium III	$e^{(0.8190(\ln(\text{hardness})) + 3.6880)}$
Copper	$e^{(0.9422(\ln(\text{hardness})) - 1.3884)}$
Lead	$e^{(1.2730(\ln(\text{hardness})) - 1.4600)}$
Nickel	$e^{(0.8460(\ln(\text{hardness})) + 3.3612)}$
Zinc	$e^{(0.8473(\ln(\text{hardness})) + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Copper	$1 + (10^{4.86} \times \text{TSS}^{-0.72} \times \text{TSS}) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times \text{TSS}^{-0.85} \times \text{TSS}) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times \text{TSS}^{-0.52} \times \text{TSS}) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (\*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (\*8), acute numerical criteria for aquatic life protection.

- (\*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (\*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (\*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:

$$\text{WLAa} = (\text{Cr}/\text{Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Dilution WLAa formulas for static water bodies:

$$\text{WLAa} = (\text{Cr}-\text{Cu})/\text{Dilution Factor}$$

Cr represents aquatic acute numerical criteria from column (\*8).

Appendix A-2

LA0056031, AI No. 148

Page 5

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*13) Wasteload Allocation for chronic aquatic criteria (WLA<sub>c</sub>). Dilution type WLA<sub>c</sub> is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLA<sub>c</sub> formula:

$$WLA_c = (Cr/Dilution\ Factor) - \frac{(Fs \times Q_{rc} \times 0.6463 \times Cu)}{Q_e}$$

Dilution WLA<sub>c</sub> formulas for static water bodies:

$$WLA_c = (Cr-Cu)/Dilution\ Factor)$$

Cr represents aquatic chronic numerical criteria from column (\*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*14) Wasteload Allocation for human health criteria (WLA<sub>h</sub>). Dilution type WLA<sub>h</sub> is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLA<sub>h</sub> formula:

$$WLA_h = (Cr/Dilution\ Factor) - \frac{(Fs \times Q_{rc}, Q_{rh} \times 0.6463 \times Cu)}{Q_e}$$

Dilution WLA<sub>h</sub> formulas for static water bodies:

$$WLA_h = (Cr-Cu)/Dilution\ Factor)$$

Cr represents human health numerical criteria from column (\*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*15) Long Term Average for aquatic numerical criteria (LTA<sub>a</sub>). WLA<sub>a</sub> numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLA<sub>a</sub> X 0.32 = LTA<sub>a</sub>.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*16) Long Term Average for chronic numerical criteria (LTA<sub>c</sub>). WLA<sub>c</sub> numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLA<sub>c</sub> X 0.53 = LTA<sub>c</sub>.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*17) Long Term Average for human health numerical criteria (LTA<sub>h</sub>). WLA<sub>h</sub> numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLA<sub>h</sub> X 1 = LTA<sub>h</sub>.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

- (\*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ( $LTA_{limiting\ aquatic} \times 1.31 = WQBL_{monthly\ average}$ ). If human health criteria was the most limiting criteria then  $LTA_h = WQBL_{monthly\ average}$ . If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

- (\*20) End of pipe Water Quality Based Limit (WQBL) daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ( $LTA_{limiting\ aquatic} \times 3.11 = WQBL_{daily\ max}$ ). If human health criteria was the most limiting criteria then LTA<sub>h</sub> is multiplied by 2.38 to determine the daily maximum WQBL ( $LTA_{limiting\ aquatic} \times 2.38 = WQBL_{daily\ max}$ ). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health

## Appendix A-2

LA0056031, AI No. 148

Page 6

criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.

- (\*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL,  $\text{ug/l}/1000 \times \text{facility flow, MGD} \times 8.34 = \text{monthly average WQBL, lbs/day}$ .
- (\*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL,  $\text{ug/l}/1000 \times \text{facility flow, MGD} \times 8.34 = \text{daily maximum WQBL, lbs/day}$ .
- (\*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.





## Appendix A-1

Page 2

LA0056031

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic Parameters	Cu Effluent Instrcom Conc ug/L	Effluent /Tech (Avg) ug/L	Effluent /Tech (Max) ug/L	MDL Effluent 1=NO 95% 0=95 % ug/L	95th % estimate Non-Tech ug/L		Numerical Criteria		HHNDW	HH Carcinogen Indicator "C"
							Acute FW ug/L	Chronic FW ug/L		
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenoxy- acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen- oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			715.1051	315.6733		
Total Cadmium				1			90.10304	3.17362		
Chromium III				10			2329.348	755.6165		
Chromium VI				10			15.712	10.582		
Total Copper				10			48.76202	33.20154		
Total Lead				5			307.3172	11.97571		
Total Mercury				0.2			4.998261	0.03459		
Total Nickel				40			3287.563	365.1102		
Total Zinc		21		20	0	44.73	387.7945	354.1152		
Total Cyanide				20			45.9	5.4	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-05					7.2E-07	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11600	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride		21		50	0	44.73	55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro- ethane				10			932	466	1.8	C

## Appendix A-1

Page 3

LA0056031

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTAA	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	001	001	001	001	
								ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	926.205	1481.025	211.575	296.3856	784.94325	211.575	211.575	211.575	503.5485	0.0352907	0.0839919	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	506.76645	812.448	---	162.16526	430.59744	---	162.16526	212.4365	504.33397	0.0354344	0.0841229	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenoc-												
acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-												
oxy) propionic acid												
(2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	946.19138	1335.7714	---	302.78124	707.95883	---	302.78124	396.64343	941.64966	0.0661601	0.1570672	no
Total Cadmium	119.21984	13.429171	---	38.150348	7.1174607	---	7.1174607	9.3238735	22.135303	0.0015552	0.0036922	no
Chromium III	3082.0771	3197.3911	---	986.26466	1694.6173	---	986.26466	1292.0067	3067.2831	0.2155067	0.5116228	no
Chromium VI	20.789333	44.777733	---	6.6525865	23.732198	---	6.6525865	8.7148883	20.689544	0.0014536	0.003451	no
Total Copper	64.519463	140.49232	---	20.646228	74.460929	---	20.646228	27.046559	64.20977	0.0045114	0.0107102	no
Total Lead	406.62681	50.675224	---	130.12058	26.857869	---	26.857869	35.103808	83.527972	0.0058687	0.0139326	no
Total Mercury	6.6134494	0.1463678	---	2.1163038	0.0775749	---	0.0775749	0.1016231	0.241258	1.695E-05	4.024E-05	no
Total Nickel	4349.9386	1544.9639	---	1391.9804	818.83084	---	818.83084	1072.6684	2546.5639	0.1789211	0.4247669	no
Total Zinc	513.11036	1498.4386	---	164.19531	794.17246	---	164.19531	215.09586	510.64743	0.035878	0.085176	no
Total Cyanide	60.732585	22.8501	54349.386	19.434427	12.110553	54349.386	12.110553	15.864824	37.66382	0.0026463	0.0062823	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	2.399E-05	---	---	2.399E-05	2.399E-05	2.399E-05	5.709E-05	4.001E-09	9.522E-09	no
VOLATILE COMPOUNDS												
Benzene	2975.7644	4760.4375	416.4375	952.24459	2523.0319	416.4375	416.4375	416.4375	991.12125	0.0694618	0.165319	no
Bromoform	3876.8295	6199.1475	1156.0305	1240.5854	3285.5482	1156.0305	1156.0305	1156.0305	2751.3526	0.1928259	0.4589256	no
Bromodichloromethane	---	---	109.9395	---	---	109.9395	109.9395	109.9395	261.65601	0.0183379	0.0436442	no
Carbon Tetrachloride	3612.1995	5775.9975	39.978	1155.9038	3061.2787	39.978	39.978	39.978	95.14764	0.0066683	0.0158706	no
Chloroform	3823.9035	6114.5175	2332.05	1223.6491	3240.6943	2332.05	1223.6491	1602.9803	3805.5488	0.2673771	0.6347655	no
Dibromochloromethane	---	---	169.2402	---	---	169.2402	169.2402	169.2402	402.79168	0.0282293	0.0671857	no
1,2-Dichloroethane	15613.17	24965.85	226.542	4996.2144	13231.901	226.542	226.542	226.542	539.16996	0.0377872	0.0899335	no
1,1-Dichloroethylene	1534.854	2454.27	19.3227	491.15328	1300.7631	19.3227	19.3227	19.3227	45.988026	0.003223	0.0076708	no
1,3-Dichloropropylene	801.8289	1282.1445	688.84589	256.58525	679.53659	688.84589	256.58525	336.12667	797.98012	0.0560659	0.1331031	no
Ethylbenzene	4234.08	6770.4	34275.15	1354.9056	3588.312	34275.15	1354.9056	1774.9263	4213.7564	0.2960577	0.7028546	no
Methyl Chloride	72773.25	116366.25	---	23287.44	61674.113	---	23287.44	30506.546	72423.938	5.0884919	12.080313	no
Methylene Chloride	25536.795	40833.975	2898.405	8171.7744	21642.007	2898.405	2898.405	2898.405	6898.2039	0.483454	1.1506204	no
1,1,2,2-Tetrachloro-												
ethane	1233.1758	1971.879	59.967	394.61626	1045.0959	59.967	59.967	59.967	142.72146	0.0100025	0.0238059	no

[illegible]



## BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0056031**  
 Facility Name: **Vermilion Parish Police Jury/Vermilion Parish Solid Waste Plant**  
 Previous Critical Biomonitoring Dilution: **100%**  
 Proposed Critical Biomonitoring Dilution: **24%**  
 Outfall discharge flow: **0.02 mgd**  
 Receiving stream 7Q10: **0.1 cfs**  
 Date of Review: **01/06/10**  
 Name of Reviewer: **Laura Thompson**

### Recommended Frequency by Species:

*Pimephales promelas* (Fathead minnow): **Once/Quarter<sup>1</sup>**  
*Ceriodaphnia dubia* (water flea): **Once/Quarter<sup>1</sup>**

Recommended Dilution Series: **10%, 13%, 18%, 24%, and 32%**

### Number of Tests Performed during previous 5 years by Species<sup>2</sup>:

*Pimephales promelas* (Fathead minnow): **1**  
*Daphnia pulex* (water flea): **N/A – Testing of species was not required**  
*Ceriodaphnia dubia* (water flea): **1**

### Number of Failed Tests during previous 5 years by Species:

*Pimephales promelas* (Fathead minnow): **No failures on file during the past five years**  
*Daphnia pulex* (water flea): **N/A – Testing of species was not required**  
*Ceriodaphnia dubia* (water flea): **No failures on file during the past five years**

### Failed Test Dates during previous 5 years by Species:

*Pimephales promelas* (Fathead minnow): **No failures on file during the past five years**  
*Daphnia pulex* (water flea): **N/A – Testing of species was not required**  
*Ceriodaphnia dubia* (water flea): **No failures on file during the past five years**

<sup>1</sup> If there are no lethal or sub-lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the biomonitoring frequency for the test species may be reduced to not less than once per year for the less sensitive species (usually *Pimephales promelas*) and not less than twice per year for the more sensitive species (usually *Ceriodaphnia dubia*). Upon expiration of the permit, the biomonitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

<sup>2</sup> Quarterly biomonitoring DMRs were submitted to LDEQ as required by LA0056031. With the exception of the 10/1/07-12/31/07 Monitoring Period, all DMRs indicated that no discharge occurred at the facility during the previous permit term.

## FRESHWATER CHRONIC

Previous TRE Activities: N/A – No previous TRE Activities

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The Vermilion Parish Police Jury/Vermilion Parish Solid Waste Plant owns and operates a Type II and III waste disposal facility in Abbeville, Vermilion Parish, Louisiana. LPDES Permit LA0056031, effective October 1, 2004, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 001 for *Ceriodaphnia dubia* and *Pimephales promelas*. The effluent series consisted of 32%, 42%, 56%, 75%, and 100% concentrations, with the 100% effluent concentration being defined as the critical biomonitoring dilution. The testing was to be performed quarterly for *Ceriodaphnia dubia* and *Pimephales promelas*. Data on file shows that the permittee has complied with the biomonitoring requirements contained in LA0056031 with no toxicity failures on file during the past five years.

It is recommended that freshwater chronic biomonitoring be an effluent characteristic of Outfall 001 (discharge of 0.02 mgd of treated leachate and contact stormwater from Outfall 101 and noncontact stormwater) in LA0056031. The effluent dilution series shall be 10%, 13%, 18%, 24%, and 32% concentrations, with 24% being the defined critical biomonitoring dilution. In accordance with the Environmental Protection Agency (Region 6) WET testing frequency acceleration(s), the biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas*. If there are no significant lethal effects demonstrated at or below the critical dilution during the first four quarters of testing, the permittee may certify fulfillment of the WET testing requirements to the permitting authority and WET testing may be reduced to not less than once per six months for the more sensitive species (usually *Ceriodaphnia dubia*) and not less than once per year for the less sensitive species (usually *Pimephales promelas*) for the remainder of the term of the permit. Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is re-issued.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3. Version 6 (April 16, 2008), and the Best Professional Judgment (BPJ) of the reviewer.

## MEMORANDUM

TO: Angela Marse

FROM: Todd Franklin

DATE: December 28, 2009

RE: Water Quality Characteristics for Coulee Kenny, receiving water for the Vermilion Parish Police Jury / Vermilion Parish Solid Waste Plant  
LA0056031 / AI 148

The discharge from Outfall 101 flows by open ditch into Coulee Kenny. Ambient data for hardness and TSS was taken from random monitoring station #2347 (Coulee Kenny on US Highway 167, 100 feet south of Parish Road 697 and 5 miles northwest of Abbeville). The following results were obtained from 14 separate samples:

Average hardness = 78.6 mg/l  
15<sup>th</sup> percentile TSS = 21.9 mg/l

There has been no previous flow data determined for Coulee Kenny. However, based on similar waterbodies in the nearby area, this coulee is expected to be dry often within the summer months. Therefore, the default 7Q10 and harmonic mean flow of 0.1 cfs and 1.0 cfs, respectively, shall be utilized for permit limit calculations.

If you have additional questions or comments, please contact me at 2-3138.

Invoice No. \_\_\_\_\_

Page 1

**LOUISIANA WATER POLLUTION CONTROL FEE SYSTEM  
RATING WORKSHEET**

**PERMIT NO: LA0056031; AI 148; PER20090001**

1. a. Company Name: Vermilion Parish Police Jury  
b. Facility Name: Vermilion Parish Solid Waste Plant
2. Local Mailing Address: 100 N. State Street, Suite 200  
Abbeville, LA 70510
3. Billing Address (If different):
4. Facility Location: the end of Birch Road  
a. Parish: Vermillion
5. Facility Type: municipal solid waste disposal facility  
a. Treatment Process Used: oxidation pond
6. Products Produced:  
a. Raw materials stored or used:  
b. By-products produced:
7. Primary SIC Code: 4953  
a. Other SIC Codes:
8. Fac. Manager: Gerald Butaud  
a. Telephone: (337) 898-4300
9. Owner:  
a. Telephone:
10. Env. Contact:  
a. Telephone:
- |  |  |
|--|--|
| 11. State Permit No.:<br>a. Date Issued:<br>b. New:                      Modified: | 12. LPDES Permit No. LA0056031<br>a. Effective Date: October 1, 2004<br>b. Expiration Date: September 30, 2009 |
|--|--|
13. Number and Identification of Outfalls: Six, 101, 102, 103, 001, 002, 003
14. Number of Injection Wells:
15. Water Source(s):
16. Receiving Water(s): unnamed ditch, thence into Coulee Kenny, thence into the Vermilion River
- Is receiving water:
- a. Public Water Supply                      Yes ( ) No ( x )
- b. Designated Water Quality Limited      Yes ( x ) No ( )
- c. In Compliance with Water Quality Standards      Yes ( ) No ( x )
17. River Basin: Vermilion - Teche                      18. Basin Segment No. 0608
- Federal Tax I. D. No.:
- Initials of Rater: AM

**TOTAL RATING POINTS ASSIGNED 15.04**